

#### Tech-savvy consumers

- Enjoy solid security against certain types of viruses
- Get exceptional 32-bit performance for music, video, and games
- Be prepared for next-generation 64-bit software
- Conserve power, while running a whisper-quiet system

#### Small/medium business

- Protect your valuable business data from certain malicious attacks
- Enjoy leading-edge performance on your current software
- Move seamlessly to future 64-bit applications
- Save energy and get a quieter workplace

#### Commercial users

- Prevent the spread of certain viruses and strengthen your network integrity
- Enhance the performance of today's mission-critical applications
- Migrate to 64-bit computing at your own pace
- Reduce power consumption, while enabling a quiet work environment



The AMD Athlon™ 64 processor provides industry-leading performance for today's 32-bit software, while preparing customers for the future of 64-bit computing. What's more, with Enhanced Virus Protection for the upcoming Microsoft® Windows® XP SP2, the AMD Athlon 64 processor prevents the spread of network viruses. It's investment protection with real peace of mind.

Technology features	Benefits
<b>Enhanced Virus Protection for the upcoming Microsoft® Windows® XP SP2</b>	
<ul style="list-style-type: none"> <li>• Prevents damage from certain viruses, worms, and Trojan horses by causing them to become localized, short-lived, and non-contagious</li> <li>• Sets aside portions of system memory as "data only," so viruses cannot be executed</li> </ul>	<ul style="list-style-type: none"> <li>• Designed to enhance the integrity of home and office networks</li> </ul>
<b>Outstanding 32-bit performance</b>	
<ul style="list-style-type: none"> <li>• Offers superior performance on today's software applications</li> <li>• Increases memory addressability for enhanced computing experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Creates a significant performance gain for applications in which large (or many) datasets are held in memory</li> </ul>
<b>Cutting-edge AMD64 technology</b>	
<ul style="list-style-type: none"> <li>• Doubles the number of processor registers and increases memory addressability</li> <li>• Enables seamless migration to 64-bit computing</li> </ul>	<ul style="list-style-type: none"> <li>• Allows users to run 32-bit and/or 64-bit applications and operating systems as they desire – without sacrificing performance</li> </ul>
<b>Cool 'n' Quiet™ technology</b>	
<ul style="list-style-type: none"> <li>• Enables frequency and voltage switching for performance on demand</li> <li>• Reduces noise and heat at their sources</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces processor power consumption by up to 65 percent and cuts the amount of system noise</li> </ul>
<b>HyperTransport™ technology</b>	
<ul style="list-style-type: none"> <li>• Reduces I/O bottlenecks, increases bandwidth, and reduces latency</li> <li>• Enables a system bus to run at up to 1600MHz</li> <li>• Supports up to 9.6GB/sec processor-to-system bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>• Provides high-speed I/O communication for your current and future application needs</li> </ul>
<b>Integrated memory controller</b>	
<ul style="list-style-type: none"> <li>• Reduces latencies during memory access in a SMP server system</li> </ul>	<ul style="list-style-type: none"> <li>• Delivers fast computational processing for increased performance and productivity</li> </ul>

### AMD Enhanced Virus Protection for the upcoming Microsoft® Windows® XP SP2:

- Prevents the spread of certain malicious viruses, which are transported via e-mail and instant messaging applications
- Enables users to surf the Internet with confidence, knowing they have an extra level of protection against harmful web downloads
- Improves the integrity of home and office networks
- Minimizes the total cost of ownership of AMD64 processor-based systems

## Microsoft®

“The work that companies such as AMD are doing provides an additional layer of protection for our customers.”

— Rebecca Norlander, group manager in charge of the Windows XP SP2 release at Microsoft Corp.

Feature	AMD Athlon™ 64	Pentium® 4
Architecture introduction	2003	2000
Infrastructure	Socket 754	Socket 478
Process technology	0.13 Micron, SOI	.013 Micron
Number of transistors	105.9 million	55 million
Enhanced Virus Protection	Yes	No
32-bit instruction set support	Yes	Yes
64-bit instruction set support	Yes, AMD64 technology	No
Cool ‘n’ Quiet technology	Yes	No
System bus technology	HyperTransport™ technology up to 1600MHz Full duplex	Front Side Bus @ 800MHz, 533MHz* Half duplex
Integrated DDR Memory Controller (MCT)	Yes, 64-bit + 8-bit ECC PC3200, PC2700, PC2100, or PC1600	No, Discrete logic device on motherboard
Total processor-to-system bandwidth	HyperTransport bandwidth: up to 6.4GB/sec Memory bandwidth: up to 3.2GB/sec Total: up to 9.6GB/sec	Total: up to 6.4GB/sec
Integrated northbridge	Yes, 128-bit data path @ CPU core frequency	No, discrete logic device on motherboard, 64-bit data path @ 200MHz
High-performance, on-chip cache	L1: 128KB L2: 1024KB, 512KB† (exclusive) Total Effective Cache: 1152KB, 640KB	L1: 12K µop trace + 8KB data L2: 512KB (inclusive) Total Effective Cache: 512KB
3D and multimedia instructions	3DNow!™ Professional technology, SSE2	SSE, SSE2